

# Principles for Reducing Assessment Costs

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1st Annual CMMI Technology Conference  
& User Group Event

13-15 November 2001





# Background



- **TRW (and other companies) spend considerable effort in preparing for and performing process appraisals**
- **In the spirit of process improvement, TRW reviewed results and timelines from our past assessments**
  - 20% of the time was spent in rework
  - 20% of the time was spent in activities that didn't add value
- **This presentation provides techniques for reducing appraisal duration and cost, while maintaining high accuracy**
  - Proven in over 20 TRW CBA IPI assessments
  - TRW assessments are typically completed in 5-7 days, days do not exceed ten hours, and the findings are detailed and accurate
- **The techniques apply equally well to internal assessments and external evaluations**



# Common Appraisal Problems



- The team ignores the questionnaire responses
- The appraised organization supplies poor quality evidence material
- The team spends excessive time drafting "perfect" words for the findings
- The team spends excessive time arguing about issues unrelated to the final results



***This results in waste and re-work, often causing long workdays***

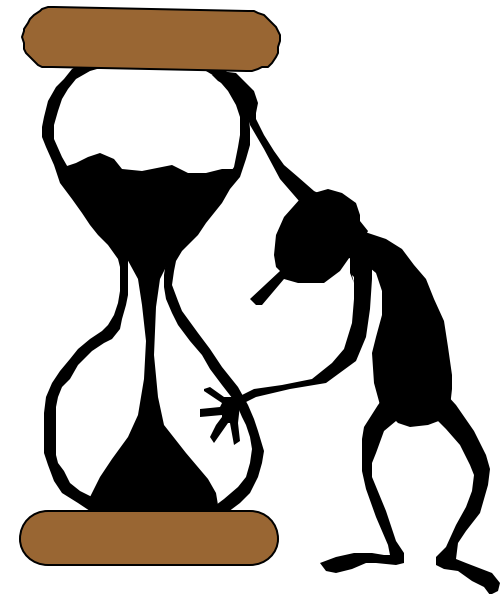


# A Reasonable Workday



## *Maintaining a reasonable workday relies on several factors:*

- Identifying an appropriate number of days for the appraisal, based on the scope of the model and organization
- Effective team dynamics, experience, and CMM/CMMI knowledge
- Effectively using questionnaire data and document review to focus the interviews
- Up-front preparation by the appraised organization to reduce appraisal team work and confusion
- Continual team emphasis on working efficiently, especially in data consolidation and findings development





# Principles Used to Reduce Duration/Cost



## *Pre-Appraisal Preparation*

- Map the organization and projects' practices and evidence to the model to identify gaps and appraisal issues
- Use practice implementation indicators to determine progress and appraisal readiness
- Use informal appraisals to identify interpretational issues and systemic problems

**Focus of appraisal shifts from discovery to verification**

**Don't spend the money & time on a formal appraisal until you need the accuracy, and you're ready**



# Ensuring Readiness for Assessment



- **Use a spreadsheet to document evidence for every practice**
  - Completed for organization (Process Management process areas) and for every project (and each discipline)
  - Can be used to track organizational and project readiness

Practice ID	REQM SP 1.4-2 <i>Maintain bi-directional traceability among the requirements and the project plans and work products.</i>		
PII ID	Work Products (EST.WP)	Indirect Artifacts (EST.ART)	Affirmations (EST.IAFF)
Example Evidence (Look Fors / Listen Fors)	[1. Requirements traceability matrix] <ul style="list-style-type: none"> <li>• Reports or database indicating traceability of requirements to/from project plans and work products, at each applicable level of system decomposition.</li> </ul>	[2. Requirements tracking system] <ul style="list-style-type: none"> <li>• Criteria and completed checklists and checklists for review of requirements traceability.</li> <li>• Requirements tracking across the lifecycle.</li> <li>• Revision and maintenance of requirements traceability across the lifecycle.</li> <li>• Listings of allocated requirements in reviews of project plans and work products across the lifecycle.</li> <li>• Requirements mappings used to support impact assessments.</li> </ul>	
Assessment Considerations	<ul style="list-style-type: none"> <li>• Ensure that both vertical and horizontal traceability are included (e.g., across functions or interfaces)</li> <li>• (How do we assess traceability of requirements to “project plans”? This is probably more implicit than explicit, and applies to plans such as test plans, V&amp;V plans, etc. See PP PA for project plans that might be affected. The assessment team must reach consensus on how this is to be assessed for the organization.)</li> </ul>		
CMMI Notes	<ul style="list-style-type: none"> <li>• Model CR: Consider whether REQM.SP1.4-2 should be “Establish and maintain bi-directional traceability” instead of just maintain; where is this traceability established?</li> <li>• Consider whether “usage” PIIs should be mapped here for maintenance of requirements traceability.</li> <li>• Model CR: Clarify the intent of REQM SP1.4-2 in establishing traceability between requirements and project plans. The SP statement is explicit, but the informative text weakens this and says “requirements traceability <u>can</u> also cover....” Be explicit in what is intended by traceability to project plans, or consider whether this component of the practice statement should be removed. Consider how the “project plan” described in this SP relates to that used in the PP PA. Consider also whether this traceability should be explicitly reflected in SP1.5.</li> </ul>		

**Example from  
CMMI Project**



# Principles Used to Reduce Duration/Cost



## *Appraisal Planning*

- Identify the appropriate organizational, discipline, and model scope, and use scope to drive the appraisal plan and schedule
- Select the right set of projects to characterize the process capability, and right set of interviewees
  - Let the organization select the interviewees
- Establish efficient team dynamics, experience, and knowledge
  - At least half the team members should be experienced appraisers
  - Ensure integrity by using external appraisal team leaders
- Have the organization and projects assemble the evidence before the appraisal

**Appraisal experience is the single biggest success factor**



# Principles Used to Reduce Duration/Cost



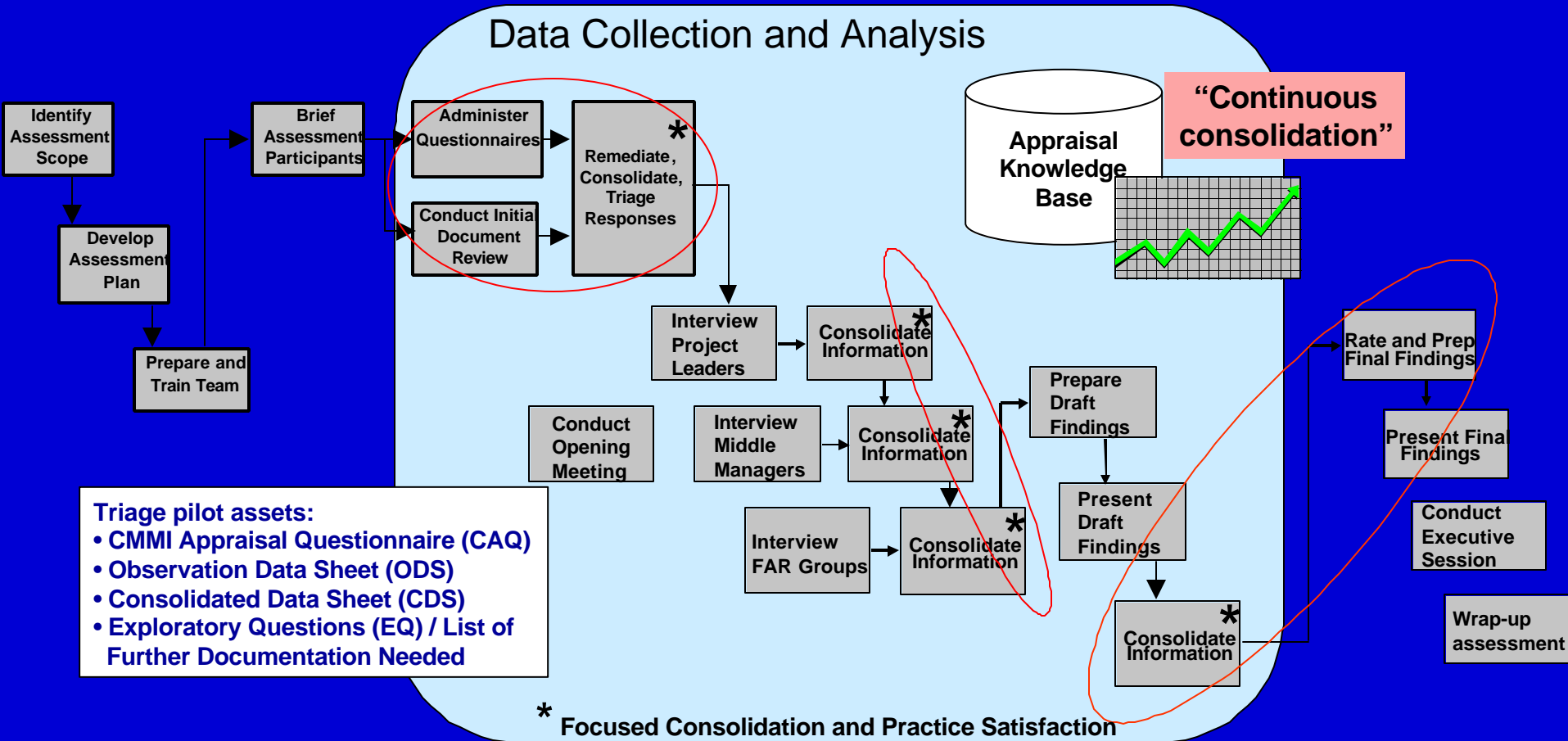
## *Appraisal Execution*

- **Start by having the organization describe their process and documentation**
- **Effectively use process mappings and practice implementation indicators to focus the interviews**
  - Use the interviews and document review to confirm the responses
- **Maintain continual team emphasis on working efficiently, especially in data consolidation and findings development**
  - Use standard questions to guide interviews
  - Don't write "random" observations, simply rate each practice
  - Use a standard template for findings
  - Draft findings in mini-teams, then review as a team

**Appraisal is a cooperative effort**



# Triage Concept





# Interviews are not Detective Movies!

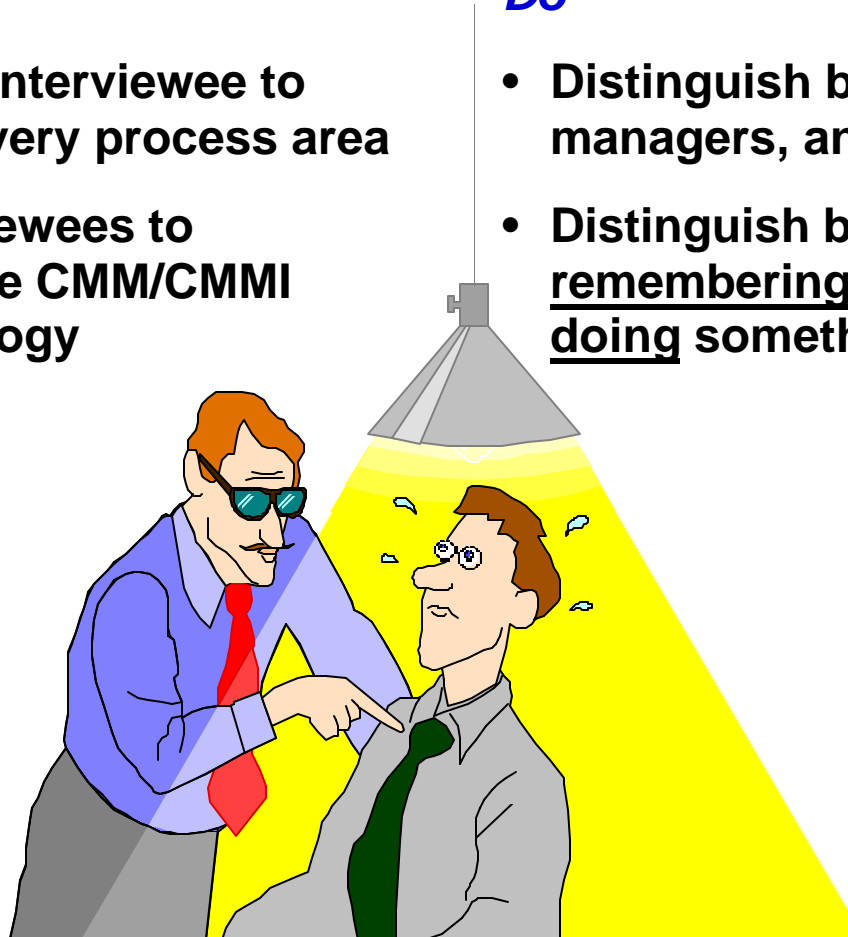


## *Do Not*

- Expect every interviewee to know about every process area
- Expect interviewees to understand the CMM/CMMI or its terminology

## *Do*

- Distinguish between performers, managers, and users of a process
- Distinguish between not remembering something and not doing something





# Use Judgment in Rating



- **Goals are required, practices are expected, all other is informative**
  - You don't have to do all the subpractices, or produce all the typical work products, to satisfy the model
- **Having a (minor) weakness doesn't necessarily imply the process area is not satisfied**
  - Are the goals met? Is the weakness systemic or an isolated case?

## *Appraisal Findings*

- In isolated situations, ...
- There is a lack of awareness that...
- Consistency could be improved by...



# Recommendations (to our Competitors)



- **Start your improvement initiative with a long, formal appraisal**
  - People appreciate you pointing out their weaknesses, especially against a model they don't yet understand or use
- **Don't worry about the appraisal schedule**
  - All appraisal take 5 days, regardless of size or scope
  - People do their best work late at night
  - Late hours assist in building team consensus
- **Eliminate team training and preparation to save cost**
  - Engineers have natural people skills (interviewing, consensus building, ...) and an inherent appreciation of process concepts
  - The 700 pages tell you exactly how the practices have to be done, and eliminate time-consuming professional judgment
  - Crafting “perfect observations” is good practice for engineers who eventually want to author CMMI books
- **Maintain a healthy sense of paranoia**



# Summary



***Efficient appraisal techniques can reduce appraisal duration and cost, while maintaining high accuracy***

- **Plan reasonable workdays**
- **Shift focus of formal appraisals from discovery to verification**
- **Maintain effective team dynamics, experience, and model knowledge**
- **Use up-front preparation by the appraised organization to reduce appraisal team work and confusion**
- **Maintain a continuous team emphasis on working efficiently, especially in data consolidation and findings development**